1877MNRAS..37..432C

The spectrum of this comet much resembles that of Comet II. 1868, as figured by Dr. Huggins in the *Phil. Trans.*

The spectrum of Comet *c* was first successfully measured on May 5: it too consisted of three bright lines, but none of them coincide with those of the other comet. The results are

m.m.m.		
467·6	Faintest line; brightness	= 2.
507·9	Brightest line; ,,	= 5.
528·2	,, ,, ,,	= 3.

The last line is very close to E of the Solar Spectrum. There we have to deal with a comet closely allied to Brorsen's Comet of 1868 and Comet I. 1871.

The measures were all made with a spider's line, or a steel cone, in either case feebly illuminated in an otherwise perfectly dark field. The steel cone is probably the best, as it gives a broader line and requires less illumination.

Dunecht Observatory,
1877, *May* 8.

On two "Flats" on the Moon's Limb, observed March 23, 1877.

By Dr. Ralph Copeland.

(*Communicated by Lord Lindsay.*)

At $11^{h}\ 50^{m}$ G.M.T. on March 23, 1877, while preparing to observe the reappearance of κ *Geminorum*, I noticed two remarkable "flats" on the Moon's limb. The position angles of their centres were found to be 264° 28′ and 272° 30′; their lengths being 1′ 39″·1 and 1′ 18″·2 respectively. These depressions coincided sensibly with a spider's line throughout their entire length. Assuming the lowest points to have been exactly on the Moon's limb, the above measures give the following results:—

Depressions of March 23, 1877.

	1st Depression.	2nd Depression.
Length in arc of Moon's limb	5° 46′	4° 31′
Apparent depth	1″·24	0″·78
,, ,, in toises	1125	703
Selenocentric Latitude	− 14° 25′	− 6° 1′
,, Longitude	+ 87 18	+ 86 41

For the sake of comparison, it may be mentioned that the height of *Pico* is 1,062 toises according to Beer and Mädler.

It is highly probable that these indentations are identical with two of those seen by the Rev. H. Cooper Key on September 6, 1863. The second of them was again seen by Mr. Birt on November 3 and 4, 1864, and still later on November 12, 1875.

Downloaded from http://mnras.oxfordjournals.org/ by guest on September 2, 2015

© Royal Astronomical Society • Provided by the NASA Astrophysics Data System

1877MNRAS..37..432C

But the best observations I have been able to find are by Dr. Erck on November 11, 1875, who observed th[illegible] with his 7½-inch Alvan Clarke (See *Astronomical Register*, No. 156). His words are: "On laying the thick bars of the micrometer parallel to them I found their position, inverted, to be respectively 153° and 146°. The largest of the two flats was at 153°, and for something more than 3 minutes of arc, corresponding to 12° of lunar latitude, the limb did not deviate from the straight edge of the bar." It is not quite clear what is meant by "inverted" positions, but supposing them to be counted from the parallel—they were measured with the bars—the positions would become 243° and 236°, and would fall on the Moon's bright limb,* and the depressions would be identical with those observed at Dunecht, the results being:—

Depressions of November 11, 1875.

	146° Depression.	153° Depression.
Length in arc of Moon's limb		10° 18′
Apparent depth		4″·05
,, ,, in toises		3599
Selenocentric Latitude	−14° 21′	− 7° 20′
,, Longitude	+85 3	+84 16

The depth is nearly equal to that of *Newton*, the deepest known crater in the Moon, the bottom of which is 3727 toises below the highest peak of the rim.

Guided by the above results, there is no difficulty in coming to the conclusions that—

The 1st of the depressions is most probably caused by the presence of the adjoining ring-plains *Ansgarius* and *Behaim* on the Moon's limb;

And that the 2nd depression is undoubtedly a vertical section of *Kästner*.

Schroeter, who first described the ring-plain *Kaestner*, saw it on the terminator 20 hours after full moon on February 23, 1796. The grey surface of the plain then appeared to be entirely cut off from the Moon by the shadows of the mountains on the eastern margin. On the occasion of its discovery (September 30, 1792) Schroeter found the length from N. to S. to be 3′40″, a measure fairly agreeing with Dr. Erck's "something more than 3 minutes of arc." Beer and Mädler have also seen the floor of *Kästner* separated from the rest of the Moon, but the Rev. Cooper Key seems to have been the first to notice its projection on the Moon's limb.

Dunecht, June 7, 1877.

---

* 153° and 146° are out of the question, as being on the dark limb; but, fortunately, Mr. Birt's general account of the appearance and position of the depressions on the following evening points positively to a part of the limb near *Kästner*.

Downloaded from http://mnras.oxfordjournals.org/ by guest on September 2, 2015

© Royal Astronomical Society • Provided by the NASA Astrophysics Data System